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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,216	03/14/2001	Shinya Kobayashi	HO4-3303/HO	8566

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08/14/2002

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EXAMINER

NGUYEN, LAM S

ART UNIT

PAPER NUMBER

2853

DATE MAILED: 08/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/805,216

Applicant(s)

KOBAYASHI ET AL.

Examiner

LAM S NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 8 is/are rejected.
- 7) ☒ Claim(s) 2-7 and 9-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 JUNE 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

1. Claim 1 is rejected under 35 U.S.C. 102(e) as being obvious by Wen et al. (US 6046822).

Wen et al. discloses an image forming device comprising:

a head formed with a plurality of nozzles (FIG. 1a, element 47);

a converting unit (in term of “calibrator”) that converts recording data (in term of “the pixel values”) into driving data (in term of “waveform index numbers”), the driving data including data sets defining driving pulses for corresponding ones of the plurality of nozzles (column 1, line 66 to column 2, line 3);

a feed unit that feeds a recording medium in a first direction (FIG. 5: a feeder feeds the printing medium (element 120));

an ejection element (FIG. 1b, element 260) provided to each one of the plurality of nozzles (FIG. 1b, element 45) for ejecting an ink droplet (FIG. 1b, element 1b) from the corresponding nozzle onto the recording medium in response to the driving data while the feed unit is feeding the recording medium in the first direction; and

a memory that stores nozzle profile data (in term of “a droplet placement

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characteristic”) (column 1, line 50-53: teaching a nozzle has a droplet placement characteristic associate therewith. Thus, there must be a memory to store this characteristic data such as Look-Up-Table introduced in column 2, line 40-45)) including waveform data and timing data for each of the plurality of nozzles, the waveform data and the timing data (column 2, line 13-15) indicating a waveform and a generating timing, respectively, of the driving pulse for each one of the plurality of nozzles (column 1, line 50-57),

wherein the converting unit converts the recording data into the driving data based on the nozzle profile data, and each of the driving pulses is defined by a plurality of data sets of the driving data (column 1, line 66 to column 2, line 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wen et al. (US 6046822) in view of Mutoh et al. (US 4673951).

Wen et al. discloses the claimed invention as discussed above except the comprising of a deflection electric field generating unit and a charging electric field generating unit, the deflection electric field generating a deflection electric field in a space defined between the recording medium and the head, the deflection electric field having a field element in a second direction substantially perpendicular to the first direction and a third direction in which the ink

droplet is ejected, the charging electric field generating unit generating a charging electric field in the plurality of nozzles, the charging electric field having a field element in the third direction.

However, Mutoh et al. discloses a deflection electric field generating unit and a charging electric field generating unit, the deflection electric field generating a deflection electric field in a space defined between the recording medium and the head, the deflection electric field having a field element in a second direction substantially perpendicular to the first direction and a third direction in which the ink droplet is ejected, the charging electric field generating unit generating a charging electric field in the plurality of nozzles, the charging electric field having a field element in the third direction for deflecting a row of charged droplets and permitting a row of uncharged droplets to proceed straight toward the printing medium (FIG. 14, element 2, and column 2, line 24-27).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to include a deflection electric field generating unit and a charging electric field generating unit for deflecting a row of charged droplets and permitting a row of uncharged droplets to proceed straight toward the printing medium as disclosed by Mutoh et al. into the printing apparatus disclosed by Wen et al. The motivation of doing so is that to provide a high speed ink jet printer having a high resolution and high degree of tone reproducibility as taught by Mutoh et al. (column 2, line 5-8).

Allowable Subject Matter

3. Claim 2-7, and 9-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Referring to claims 2, 3, and 9: The most pertinent art Wen et al. (US 6046822) fails to disclose the comprising of a designating unit that designates a target ink amount of the ink droplet and a target impact position on the recording medium on which the ink droplet impacts; a measuring unit that measures a distance between the target impact position and an actual impact position on the recording medium where the ink droplet has impacted with respect to the first direction; and an updating unit that updates the nozzle profile data based on the target impact position and the distance measured by the measuring unit. Therefore, the limitations disclosed in claims 2 and 3 are not taught by the prior art.

Referring to claims 4-7 and 9-12: Allowable since their dependence on the allowable claims 2, 3, and 9.

Referring to claim 13: The most pertinent art Wen et al. (US 6046822) fails to disclose the comprising of a resolution changing unit that changes a time resolution, wherein each one of the plurality of data sets of the driving data having an original time resolution, and the resolution setting unit that sets the original time resolution of each of the data sets to a predetermined time resolution and wherein the original time resolution determines the waveform of each of the driving pulses, and the predetermined time resolution determines the generating timing of each of the driving pulses.

Referring to claim 14: Allowable since its dependence on the allowable claim 13.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (703)305-3342.

The examiner can normally be reached on 7:00AM - 3:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BARLOW can be reached on (703)308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

LN

August 12, 2002


John Barlow
Supervisory Patent Examiner
Technology Center 2800